



CHARM-EU (CHALLENGE-DRIVEN, ACCESSIBLE, RESEARCH-BASED AND MOBILE EUROPEAN UNIVERSITY)

DELIVERABLE D7.2 – CHARM-EU: EXEMPLAR LEARNING EXPERIENCES

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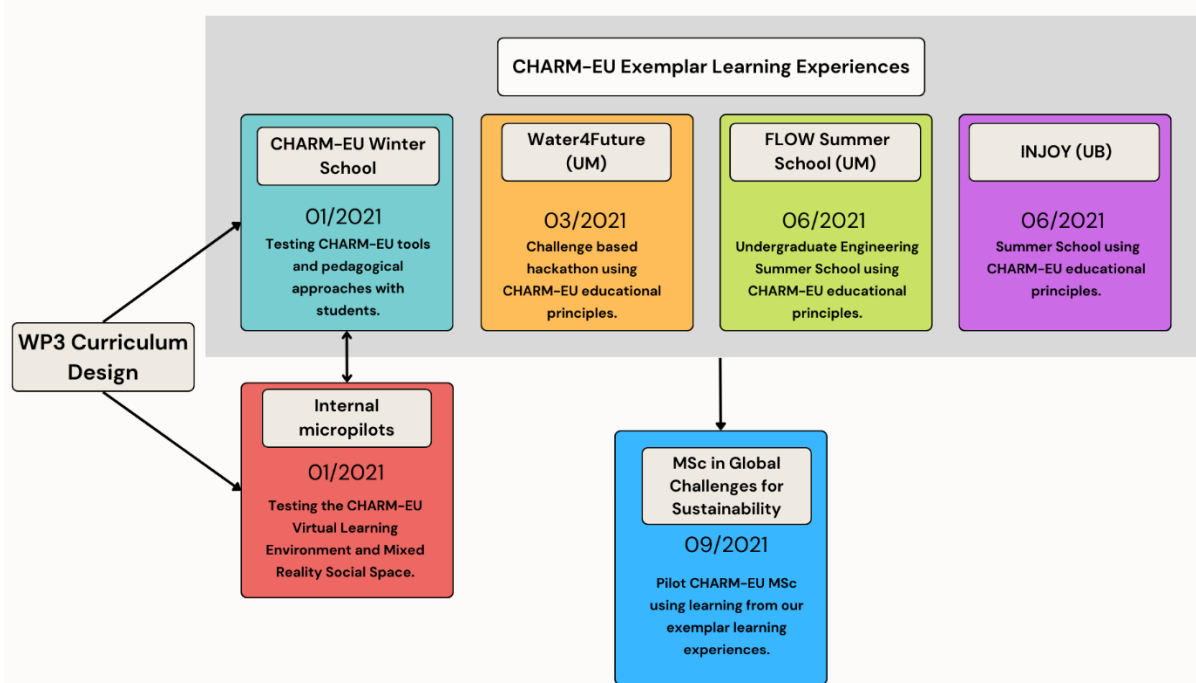
TABLE OF CONTENT

1. Exemplar learning experience: CHARM-EU Online Winter School 2021	6
2. Internal micro-pilots	7
3. CHARM aligned exemplar learning experiences.....	8
3.1. Water4Future Hackathon- March 2021.....	8
3.1. FLOW Grand Industrial Challenges in France: Summer School - June 2021	9
3.2. INJOY- June 2021.....	9
4. Conclusion and linked resources	10

EXECUTIVE SUMMARY: EXEMPLAR LEARNING EXPERIENCES

This document provides a description of exemplar learning activities designed, implemented, and evaluated by CHARM-EU Work Package 7. These exemplar learning activities were instrumental in testing educational and administrative elements of the CHARM-EU Masters in Global Challenges for Sustainability. WP 7.2 was divided into three sub deliverables: Exemplar learning experiences, micro-pilots and CHARM Aligned exemplar learning experiences. The following sections describe the key outputs of these deliverables.

Figure 1: CHARM-EU WP7 Exemplar learning experiences



Work Package 7 (WP7) exemplar learning experiences were informed by work that the curriculum design work package (WP3) developed over the course of 2020 to 2021. This included the curriculum design blueprint (3.1) and programme content guidelines (3.2). The programme content guidelines in turn informed the creation of the overarching programme learning outcomes and teaching strategy on the CHARM-EU Master in Global Challenges for Sustainability. WP7 also worked closely with the Virtual Learning Environment (VLE) sub work package (WP4.4) at this time to inform the design of the CHARM-EU virtual learning environment.

Two key areas are described below: how exemplar learning activities were designed, and how they were delivered and reported upon.

Links are provided to full evaluation reports for some of these activities.

1. Exemplar learning experience: CHARM-EU Online Winter School 2021

WP7 conducted an exemplar learning experience in the form of an online Winter School which took place from January 27th to 30th, 2021, full details can be found in the [Winter School Report](#) in the CHARM-EU Toolkit. This was originally envisaged as an in-person Summer School programme to be held in the summer of 2020, but the Covid-19 pandemic introduced delays which resulted in the decision to move to an online Winter School format at the later date. This exemplar learning experience programme tested proposed pedagogical tools and approaches to be used by CHARM-EU in the pilot MSc in Global Challenges for Sustainability.

The design stage began almost one year prior to this with a series of design workshops conducted by WP3, in Trinity College Dublin in February 2020. Staff feedback from this session provided an important guide for WP7 when developing the Winter School programme content (Figure 2). The initial feedback was also shared with the technology teams and has been influential in the selection of our technologies in CHARM-EU.

Figure 2: CHARM-EU Online Winter School 2021 Schedule

Day 0	Day 1	Day 2	Day 3	Day 4
Registration, preferences and selection Online"/Flipped Classroom Videos from KCTs with the societal challenges	Topic Transdisciplinarity Research and Stakeholder Engagement Process step: Empathise/Observe/Explore	Topic Ideation and Project Management Process Step: Research/Ideate/Plan	Topic Prototype Development and Communication Process Step: Prototype/Design	Topic and Process Step Testing /Presentation
Introduction fundamentals of [SDG]s Intro to SDGs SDG quiz	Morning Sustainable Development goals + Teambuilding Competency workshop Methods to approach challenges Identify three challenges within SDGs [SDGs] (KCT expanded?)	Morning Competency workshop 4 (Research skills [R]) Competency workshop 5 (Project management) [TS] [SAL] Investigation strengths and solutions for the challenges	Morning Contin. Prototyping [CD]	Morning Final Preparations/Future planning and limitations exploration
Post a pitch of yourself (video introduction)	workshopMethods to approach challenges Identify three challenges within SDGs [SDGs] (KCT expanded?)	Afternoon Students investigate and propose solutions to challenges	Afternoon Competency workshop 6 (presenting and communication skills) [TS]	Afternoon Present futuring scenarios to city stakeholder, assessed by KCT and stakeholders. Presenting the solution (digitally and in an innovative way).
Define personal goals	Afternoon Competency workshop 3 (Transdisciplinarity [TD]) Discourse and Dialogue [TS] Stakeholder Discussion + Consult with client (KCT involvement)	Identifying Prototype/Solution Space Prototyping [CD]	Try-out pitch to client/KCTs and/or coach. Intragroup feedback on pitches	Review/Reflect/Future actions Self assessment/Peer assessment/ Evaluation – post-survey
Matching survey – define the teams at the end of the day & Pre-survey – for evaluation	Evening Social	Evening Vlog Reflection?		Evening Social

A substantial amount of our design work focused on the research aspects of the student experience, and a set of instruments were developed to explore this topic. These were administered as online pre and



post-tests, and were followed by a set of student and staff focus groups to further explore the survey responses.

Following the conclusion of an extremely successful and well received programme, WP7 staff worked throughout 2021 to analyse findings and share data across the various work packages. These findings have directly influenced the design of our MSc programme.

A subgroup of WP7 was formed to complete the necessary reporting on our Winter School exemplar learning experience. This included Dr. Jake Byrne, Dr. Agnes Albert, Daniel Griffin and Dimitra Mousa, with input from the wider group when required. The report is based on student and staff feedback. It highlights the instruments and protocols that WP7 developed, provides an analysis of the responses and focus group feedback, as well as an overview of the programme content. In addition a full evaluation can be found in the evaluation report (7.4) in the toolkit.

2. Internal micro-pilots

WP7 invited other work packages to conduct their own micro-pilots to be included in the Winter School, and a small set of these were requested from some of the other WPs. Two additional micro-pilots were successfully conducted, while a third Mobility related micro-pilot was attempted but not included due to it being incomplete at the time of the programme delivery and mobility limitations due to the COVID pandemic.

- WP4.4. VLE Feedback (completed and reported on in the evaluation report, 7.4)
 - This proposed pilot sought to examine student attitudes regarding the planned CHARM-EU Learning Management System (LMS, i.e. MS Teams, Moodle). The LMS forms a core component of the CHARM-EU virtual learning environment (VLE) and is the main portal that students use when engaging with course content. The University of Utrecht (UU) has worked throughout 2020 on the design and implementation of the LMS, including a new and bespoke accessible design for the user interface of the system.
- WP4.5. A Mixed Reality Social Event Space (completed and reported on in the evaluation report, 7.4)
 - This proposed pilot sought to examine student attitudes regarding the potential of multi-user mixed reality spaces to support transdisciplinary and technology-enhanced teamwork. While mixed realities offer numerous affordances to support online teamwork (Shin, 2017), WP4.5 recognized the experimental nature of this technology and therefore proposed a low stakes pilot that would examine the relevant affordances by addressing the need for an online social space in the CHARM-EU Winter School. The pilot tested an online mixed reality environment with participants of the Winter School by providing an online space that they could join during the planned social event for the programme. The Mozilla Hubs environment was selected by WP4.5 due to its low



barrier to entry, cross-platform support and Mozilla's long-standing championing of security, privacy and user rights.

- WP5. Mobility Matrix (Not ready in time to include in the event)
 - The testing of the Mobility Matrix System sought to explore its use for blended mobility activities (such as a winter/summer course), the future mobility system and its supporting services, and as the process of mobility integration into teaching and learning developments.
- WP6. Diversity Guidelines for recruitment
 - This document has been made with the aim to support a diverse recruitment of students for the Summer/Winter School of CHARM-EU. The document tries to provide as concrete and exhaustive information as possible when it comes to guidelines and possibilities.

Information about the evaluation of these micro-pilots is available in 7.4 evaluation report, also available as part of the Toolkit.

3. CHARM aligned exemplar learning experiences

Another avenue for illustrating the CHARM-EU model was through aligned events which incorporated CHARM-EU educational principles or teaching and learning approaches. For these events, a template was created in which each event described its alignment with CHARM-EU educational approaches. These are good exemplars of existing initiatives within the CHARM-EU alliance that exemplify the CHARM-EU educational principles.

3.1. Water4Future Hackathon- March 2021

Water4Future was an international online hackathon addressing urban water challenges and calling participants to co-design a sustainable solution for the future. This was the 3rd edition of this hackathon, held between the 5th -6th March 2021, with an initiative from UNESCO and the university of Montpellier.

By offering a collaborative experience, the opportunity to take part in a multidisciplinary team supported by external experts and stakeholders to work towards a more sustainable future, Water4Future perfectly embodied the CHARM-EU model. Teams were formed with participants from CHARM-EU, Montpellier, Abidjan (Ivory Coast), La Réunion and other European universities. For 36 hours, these multidisciplinary teams collaborated under the guidance of international experts and external stakeholders.

The objective was to create a team project, foster entrepreneurship, imagine new digital tools and promote innovative solutions to preserve our environment and improve everyone's daily life. The theme of the hackathon also aligned with one of the three CHARM-EU paths (Water, Food, Life & Health): the Water & City theme was divided into 4 sub categories: 1) water in urban space; 2) water and risks; 3) water and health; 4) water to be preserved. Considering how fast our societies are urbanising and the



hydrological risks amplified by climate change, the issue of water and city has become an unavoidable subject when striving for a more sustainable future.

For the latest information on this programme [please visit the website here](#).

3.1.FLOW Grand Industrial Challenges in France: Summer School - June 2021

The FLOW Summer School was held from May 25th to June 11th, 2021 remotely. Led by Polytech Montpellier in partnership with two other Engineering schools of Montpellier, L'Institut Agro SupAgro Montpellier and ENSCM, it gathered 50 undergraduate engineering students of 20 different nationalities, including 7 students from CHARM-EU partner universities (2 UB, 3 TCD and 2 ELTE). Students from CHARM-EU universities were provided a fee waiver for the programme, and those who completed the Summer School were provided with an 8 ECTS certification from the University of Montpellier.

The Summer School strongly aligned with all CHARM-EU educational principles. For example, for the principles *research-led research based*, *technology enhanced* and *situated authentic learning*, 64 hours of lectures, laboratory work and scientific visits were taught by stakeholders from multiple research institutes. Lectures, practical work, and scientific visits were alternated to support these principles.

French language courses and social and cultural visits were held over 24 hours, supporting the principle *transnational and intercultural learning*. A 12 hour cross disciplinary team based project on sustainability supported *challenge driven learning transdisciplinarity*, *transversal skills* and *sustainability*. In addition, students could choose between 3 tracks, complementing a similar approach in the CHARM-EU MSc.

The general assessment of this 100% distance learning edition was very positive since more than 90% of the students were satisfied to very satisfied with the program.

For the latest information on this programme [please visit the website here](#).

3.2.INJOY- June 2021

INJOY was a 10-day online experience to promote healthy ageing business ideas, involving a diverse student cohort (see Figure. 3). INJOY was an interdisciplinary collaboration merging the sectors of food innovation, technology, nutrition science, public health, business, economics and gerontology.

Thanks to the training from experts and keynote speakers related to nutrition, physical activity, business, entrepreneurship, innovation, sustainability, finances, pitching, etc. and personalized mentoring by professionals from the European network EIT Health Alumni, the teams had several inputs during the duration of the program to improve their initial ideas and re-define the business model to a better market-fit proposal.

INJOY strongly aligned with all CHARM-EU educational principles. For example, project ideas must be student led, research informed and challenge driven. Teams are diverse in terms of gender, nationality



and discipline. The learning incorporates technology enhanced online delivery and situated authentic learning, including masterclasses in Healthy Ageing, meet the entrepreneur, inspirational talks by key opinion leaders and exploring real work case studies in industry and innovation.

2021 was the 3rd and final edition of the INJOY program. In this last edition more than 40 students participated, 30 projects presented and 100 additional participants including mentors, speakers and the jury panel took part.

For an archive of previous iterations [please visit the website here](#).

Figure 3: INJOY 2020 student diversity

Nº of Students	Nationality	Nº of Students	Academic background
1	Argentinean	12	Nutrition and Dietetics
1	Bolivian	1	Software Engineering
1	Bulgarian	1	Industrial Design
1	Chilean	4	Pharmaceutical Sciences
2	Dutch	2	Biomedicine
3	Ecuador	4	Organic Chemistry
1	Egyptian	4	Biotechnology
1	Guatemalan	1	Psychology and Neurosciences
1	Irish	1	Humanities and Social Sciences
2	Italian	1	Biology
1	Lebanese	13	Food Innovation
6	Mexican	1	Business Management
24	Spanish		

4. Conclusion and linked resources

This document aimed to provide an overview of CHARM-EU exemplar learning experiences: the CHARM-EU Online Winter School 2021, some internal micro-pilots, and some CHARM aligned exemplar learning experiences. When designing the exemplar learning experiences, care was taken that they reflect the educational principles and content guidelines outlined by the curriculum design team (WP3). It was also ensured that they provide an opportunity for testing the virtual learning environment and the learning managements system to be introduced in the pilot MSc in Global Challenges for Sustainability programme which is reported on in evaluation report (7.4). With the exception of the CHARM aligned programs, the delivery of the exemplar learning experiences has been closely monitored and reported in various documents.

Linked resources

- [Winter School Report](#)
- [Water4Future website](#)
- [FLOW website](#)
- [INJOY website](#)